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Shigefumi Masuda

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KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER

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1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
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5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
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10 Ex parte SHIGEFUMI MASUDA and MINORU ISHIDA
11

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13 Appeal 2009-0151
14 Application 09/589,142
15 Technology Center 2400
16

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18 Oral Hearing Held: January 14, 2009
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21
22 Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and KARL
23 D. EASTHOM, Administrative Patent Judges
24

25 ON BEHALF OF THE APPELLANTS:
26

27 DEXTER T. CHANG, ESQUIRE
28 KATTEN MUCHIN ROSENMAN LLP
29 575 MADISON AVENUE
30 NEW YORK NY 10022-2585
31

32 The above-entitled matter came on for hearing on Tuesday, January
33 14, 2008, commencing at 9:35 a.m., at The U.S. Patent and Trademark
34 Office, 600 Dulany Street, Alexandria, Virginia, before Lorie B. Allen.
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1 JUDGE HAIRSTON: Good morning.

2 MR. CHANG: Good morning. We requested this hearing to address
3 any questions you might have. We addressed the Examiner's rejection we
4 feel based primarily on hindsight, based on our claimed invention.

5 We do very specifically claim the network structure as the operations
6 between devices between the center and the terminal and the terminals
7 themselves whereas in the main reference, Curry, they pretty much use a
8 top-down, centered controlled approach where they locate and filter
9 upstream noises and they filter out circuits from the top down whereas we
10 try to do a more molecular approach where we have the terminals
11 themselves be involved in the noise identification and then boosting the
12 transmissions from the terminals themselves.

13 We feel that the secondary reference that the Examiner used really is
14 speaking to a different problem. The Furukawa reference talks about two
15 transceivers end to end, matching frequencies, moving the frequencies away
16 from adjacent noises. So, it really is directed to a different problem than the
17 main reference or the claimed invention.

18 JUDGE EASTHOM: Counsel, I guess the problem maybe that we are
19 confronting and say it is directed to a different problem but it's in the general
20 area of communications between -- and both cases I think mention television
21 and signals, bi- directional, and they're both concerned with measuring
22 noise. One of them is -- Furukawa, as you suggest, does something different
23 with the noise. It shifts the frequency allocation or the carrier signals.

24 But I think the idea that the Examiner is putting forth is that Furukawa
25 just shows local control; and as you suggest from your argument, that's the
26 only difference between the primary reference and your reference. One is

1 centralized control and the other is local control. Is that characterized
2 correctly?

3 MR. CHANG: Yeah; except in this context, I think that that
4 difference is a big one because when you're talking about frequency shifting
5 that's really specific to that link whereas in the Curry --

6 JUDGE EASTHOM: Well, no. I'm focusing just on the noise, the
7 noise measurement and control itself.

8 In other words, Furukawa is saying, look, we can measure the noise
9 locally. In fact, in column two it says it's better to measure it locally because
10 if you do dynamic measurement you can respond more quickly to local
11 variations in the noise.

12 MR. CHANG: Right. I suppose strictly speaking we're not objecting
13 to any combination between the references but more to the manner in which
14 they're being combined in that if you combine the two the noise
15 measurement could be localized and we do not object to the solution that's
16 presented for matching the frequencies between the two communication end
17 points. But what we're saying is that it does not address the overall
18 confluence aggregate noise between the branches and --

19 JUDGE EASTHOM: But that's really picking -- in other words,
20 Curry already addresses the confluence of noise between branches.

21 MR. CHANG: Right; and that's --

22 JUDGE EASTHOM: And Curry does everything yours does except
23 Curry has centralized control and yours is local control.

24 In fact, I think Curry does a little more than yours does. Curry
25 isolates the noise source and switches off --

26 MR. CHANG: Right.

1 JUDGE EASTHOM: -- different receivers to try to find exactly
2 where the noise source is whereas yours simply measures noise, boost the
3 amplifier and cuts the attenuation on either side of the noise source. Curry
4 also does that but does it through commands centrally located, as you
5 suggest.

6 MR. CHANG: And I think maybe we haven't articulated as well the
7 objective of what we're doing, is that we would reduce the sophistication of
8 the local control whereas we don't need specified switching on and off each
9 and every branch where we can have an aggregate. We attenuate that branch
10 with each terminal that is not -- that is not the noise source would boost
11 upstream transmission. So, that lowers the equipment requirements for the
12 molecular control.

13 I'm not sure if I'm getting my point across to you but --

14 JUDGE EASTHOM: Well, I think I understand. You're saying you
15 have a simpler mouse trap, I think is what the basis of your point is.

16 MR. CHANG: Right.

17 JUDGE EASTHOM: Shifting gears a little bit, another -- well, it's
18 related. What if, you know, just the function of this noise control were
19 located outside of the center?

20 In other words, if you look at Curry's figure one and you see the
21 LPC16, I think it is, LPC computer 16.

22 MR. CHANG: Uh-huh.

23 JUDGE EASTHOM: And it has signal lines going back and forth to
24 the noise measuring equipment and the video processor.

25 MR. CHANG: Right.

1 JUDGE EASTHOM: So, it seems to me one of skill would realize
2 that at least part of that computer function does not have to exist inside of
3 that dotted box, 13.

4 You know, you could communicate with the computer electronically.
5 That "16" doesn't have to be in that box. And if it's not in that box, wouldn't
6 it read on your claim?

7 MR. CHANG: If that's not in the box, wouldn't that be redundant to
8 what the Examiner has used as the --

9 JUDGE EASTHOM: It's very similar; yeah. I think it's very similar.
10 I'm just suggesting that this is further suggestion that it doesn't need to be in
11 the box because those signal lines --

12 MR. CHANG: Right; but I think what we're trying to distinguish is
13 not the absence of intermediate entities alone but is the combination of
14 having them and having active transmission boosting at individual
15 subscriber terminals; and that's our solution to having simplified
16 intermediate terminals where we don't need to have discrete switches for
17 each branch. We can aggregate the attenuation for all the branches.

18 JUDGE EASTHOM: Well, I mean, Curry doesn't need these switches
19 either. His system can do it without the switches. In fact, I think that's an
20 alternative.

21 MR. CHANG: Right. It's an alternative; but their solution is to have
22 it centralized where everything is controlled by this center, whereas
23 ours -- we don't need any central control. We just have --

24 JUDGE EASTHOM: Well, you don't need central control because
25 you're not doing quite as much. You're not doing quite as much as Curry
26 does. You're simply eliminating a function that Curry performs.

1 MR. CHANG: Which is?

2 JUDGE EASTHOM: The isolation of where the noise is.

3 MR. CHANG: Isolation of where the noise is?

4 JUDGE EASTHOM: Curry's system is basically isolating most of the
5 predominant noise sources by flipping switches and measuring the noise by
6 a process of elimination. In other words, one trunk line. Open that trunk
7 line up. If the noise goes up or goes down then you know what trunk line
8 the noise is, and then further down --

9 MR. CHANG: I don't think we --

10 JUDGE EASTHOM: Whereas yours just measures noise and if you
11 don't like the noise above a certain threshold then you boost one amplifier
12 and you attenuate the other one, attenuate --

13 MR. CHANG: Right. I suppose our invention doesn't centralize the
14 determination where we have --

15 JUDGE EASTHOM: Well, you don't even have a determination.

16 MR. CHANG: I think we do because we have --

17 JUDGE EASTHOM: Well, it's not in the claim, in other words.
18 Maybe you disclose it but you don't determine.

19 MR. CHANG: We do do noise measurement. I do not understand
20 where the -- with noise reduction device, detection, noise increase. Is that
21 not --

22 JUDGE EASTHOM: Well, I was getting more to: Curry's system
23 seems to do a little more than just detect noise at each local terminal.

24 In other words, Curry's system in column 20 says they can measure
25 noise at every phantom subscriber. Right? They can measure noise at every
26 phantom subscriber.

1 But in addition to that, Curry's system can also figure out where most
2 of the noise is coming from by throwing switches.

3 It's that second part that I don't see your system doing, figuring out
4 where most of the noise is coming from.

5 MR. CHANG: Most of the noise that's coming from?

6 JUDGE EASTHOM: In other words, Curry calls it isolating the noise
7 source. He throws a switch -- he just throws a series of switches and then he
8 figures out where most of the noise is coming from.

9 MR. CHANG: Right.

10 JUDGE EASTHOM: Yours just -- on each place where you have
11 measuring equipment, you measure the level and if it's above a certain
12 threshold you simply boost and attenuate.

13 MR. CHANG: Right.

14 JUDGE EASTHOM: Curry's figures out where most of the noise is
15 coming from and boosts and attenuates.

16 MR. CHANG: They isolate the noise source and they eliminate the
17 noise source. It's our understanding that they switch and attenuate --

18 JUDGE EASTHOM: But they also boost and attenuate. If you look at
19 column nine, for example, line 51: "The LPC also commands a phantom
20 subscriber at 29 to generate an attenuate control signal to cause a switchable
21 attenuator to attenuate the signal by substantially the same amount of the
22 increase in the gain of the line amplifier 43."

23 MR. CHANG: Right. So, that still from our point of view, I suppose,
24 is an opposite-side approach, I suppose, where you isolate it from the
25 central, when you have the central measurement, and then you localize it
26 from the top down whereas in our invention we -- our objective is to not

1 have to do that, not to have to do the top-down measurement but on the
2 bottom-up.

3 So, at the subscriber terminal, we measure the noise right away and
4 then we address it at the local level. So, we don't need to have the first noise
5 measurement at the head end or the next fathom subscriber from the top
6 down.

7 So, I think what we're trying to do is to eliminate steps that are not
8 necessary; and so, we take the opposite approach. I suppose that's what
9 we're trying to do.

10 JUDGE EASTHOM: Okay. Thank you. I have just a couple of
11 questions. Turn to your claim one, please.

12 MR. CHANG: Okay.

13 JUDGE EASTHOM: On line four, it begins, "The negative limitation
14 without a noise measurement command from the center to generate a control
15 signal indicative of the noise increase."

16 MR. CHANG: Mm-hum.

17 JUDGE EASTHOM: My question is: The portion, "to generate a
18 control signal indicative of the noise increase," is that modified by -- is that
19 part of the "without" clause or is that something that's required by the noise
20 reduction device?

21 MR. CHANG: I think that modifies the control signal.

22 JUDGE EASTHOM: That modifies the noise reduction device?

23 MR. CHANG: Right.

24 JUDGE EASTHOM: You're saying that the device has to generate a
25 control signal?

1 MR. CHANG: Right. The noise reduction device generates the
2 control signal.

3 JUDGE EASTHOM: Okay. And then another question I had: Are
4 you arguing that the noise control device in Curry is not at a terminal?

5 MR. CHANG: Right.

6 JUDGE EASTHOM: You are making that argument?

7 MR. CHANG: Yes; at a subscriber terminal.

8 JUDGE EASTHOM: Well, the claim says "terminal." So, you're
9 saying that the control device 27, 38 and 67 -- those aren't terminals?

10 (Pause.)

11 JUDGE EASTHOM: In Curry, the control device is 27, 38 and 67. I
12 think you're saying those aren't --

13 MR. CHANG: Right. Right. I think in the specification, we pretty
14 consistently use the term "terminal" as to mean the end point of the
15 communication rather than any intermediate, and we consistently make that
16 distinction, and we call the noise reduction device the confluence noise
17 reduction device, and we use the term "terminal" to mean the end point.

18 I think Curry used fathom subscriber to mean that these devices are
19 similar in structure or have a similar hardware structure, I suppose. We do
20 distinguish between the two.

21 JUDGE EASTHOM: Okay. And then one other question I had is,
22 could you consider the line control unit 27 as a center or are you saying the
23 center has to be the head end?

24 MR. CHANG: Again, I think we do -- we do consider the center the
25 head end because we do make a distinction between the two.

1 I think in the meaning of Curry, again they use the term
2 "phantomsubscriber." So, it is clear that it is not anything related to a center
3 or replaceable with a center or head end. It's clear from their disclosure that
4 it's a remote terminal and they call it a fathom subscriber. I guess in some
5 ways it's equivalent to a remote device and not a central hub.

6 JUDGE SAADAT: Counsel, how about the center includes those
7 terminals or control lines. That would be a distributing center.

8 MR. CHANG: Center including those terminals?

9 JUDGE SAADAT: Mm-hum. Physically it's distributed but
10 functionally they are all centered.

11 MR. CHANG: I think then that would be inconsistent with Curry
12 because they do -- they do describe these as discrete units away from the
13 head end.

14 JUDGE SAADAT: Exactly. Physically they're not co-located.

15 MR. CHANG: Right.

16 JUDGE SAADAT: But functionally they all can be considered
17 functionally -- both of them -- to be centered or part of the center.

18 MR. CHANG: But in the context of these networks, I'm not so sure
19 you can separate the two because it really has something to do with the way
20 that it is functioning because if that is the case then everything is centered.
21 There's no distinction between the two.

22 JUDGE EASTHOM: Well, can your center have communications to
23 and from it that aren't between the center and the terminals; in other words,
24 something on the other side above the center? So, you have
25 communications, head end and then terminals, kind of like Curry has. He
26 has a local origination studio above his head end.

1 MR. CHANG: Right.

2 JUDGE EASTHOM: Fourteen.

3 Now, in Curry I don't think the local origination studio receives
4 signals from the head end. It doesn't say one way or the other. It just says it
5 transits one way. But if that was a two-way communications then would
6 you consider 14 the center or 13 the center?

7 MR. CHANG: In the context of this disclosure, I don't--

8 JUDGE EASTHOM: It's a hypothetical.

9 MR. CHANG: Yeah. It's difficult for me to say; and I can only
10 interpret the reference as it is right now, and I think with what's commonly
11 understood in this art, I think what usually people use the terms "head end"
12 and "center" to mean is the central hub that controls the network and you
13 have the remote entities that report back to the center.

14 I think it's pretty clear in the Curry reference that everything goes
15 back to the head end. They do make it very explicit everywhere in the
16 reference. They don't mention anything about autonomously controlling at
17 the subscriber terminal end of the communication. They do make it explicit
18 that it starts from the center and it goes down, localizing the noise source.
19 They don't do anything without the center knowing about this, I suppose is
20 what the difference is, I think.

21 JUDGE EASTHOM: Do these subscriber terminals in Curry have
22 amplifiers or do subscriber terminals in general have amplifiers in them for
23 communication?

24 MR. CHANG: I don't recall them specifically saying that subscriber
25 terminals have controllable amplifiers. They do talk about upstream
26 amplifying with the phantom subscriber, again under the control from

1 top-down noise localization; but they don't really talk about controlling
2 subscriber terminal amplifiers.

3 JUDGE EASTHOM: I'm just wondering if subscriber terminals in
4 general have amplifiers. I mean, Curry talks about communicating through
5 the subscriber terminal, as you suggested. So, does that mean that it
6 necessarily has an amplifier?

7 MR. CHANG: I'm not certain that it's necessary because they do have
8 amplifiers from the phantom subscriber, downstream from the phantom
9 subscriber to the subscriber terminals.

10 JUDGE EASTHOM: So, that, for example, 79, 81 and 83?

11 MR. CHANG: Right.

12 JUDGE EASTHOM: So, you don't consider -- that's not part of the
13 terminal then? Is that what you're saying?

14 MR. CHANG: They do mark them discretely from the subscriber
15 terminal. They do load them from STS and they do split out 85 --

16 JUDGE EASTHOM: Well, for example, in your spec, you talk about
17 controlling the modem at the terminal. So, you consider the modem part of
18 the terminal? You consider a separate modem part of your terminal?

19 MR. CHANG: There are cases, I suppose, that the modem can be a
20 part of the terminal.

21 JUDGE EASTHOM: But in Curry, these amplifiers aren't part of the
22 terminal; is that what you're --

23 MR. CHANG: It appears that they're not.

24 JUDGE EASTHOM: Because they're discrete?

25 MR. CHANG: Right.

1 JUDGE EASTHOM: But a modem is discrete from a terminal, also.
2 I'm just wondering why you're making the distinction there. I mean, why
3 would you call one a terminal and not the other one?

4 MR. CHANG: I think because in the context of this network we're
5 talking about between the intermediate entity between the terminal and the
6 center, and we don't distinguish what's present at the terminal. We just
7 incorporate the functionality of having it amplify at the terminal end, at the
8 subscriber end. I would suppose we can. We can envision having a modem
9 incorporated in the terminal.

10 JUDGE EASTHOM: But your claim doesn't cover controlling a
11 modem separate from a terminal. Is that what you're saying, as the noise
12 control device?

13 In other words, you have a noise control device provided at the
14 terminal.

15 MR. CHANG: Right.

16 JUDGE EASTHOM: But I notice in your spec you say "or we can
17 control the modem." I can't remember the page. I'm sorry. So, this noise
18 control device in your claim either covers controlling the modem that's
19 separate from a terminal or it doesn't; and that's the question. Does it cover
20 controlling the modem as a modem separate from a terminal, boosting its
21 transmission level?

22 MR. CHANG: In the way that this claim is raised, I think it would
23 have to be incorporated with the terminal, provided at the terminals.

24 I don't think we've tried to broaden the scope to include anything
25 between the terminal and the noise reduction device. I think we make it

1 pretty clear that we have the center; we have the terminal, and then we have
2 what's in between.

3 So, I think in this context we don't try to separate out the discrete
4 entities that are separate from the terminal.

5 JUDGE EASTHOM: I appreciate it. Thank you.

6 JUDGE HAIRSTON: Could I get you to sum up your position? Your
7 time is up. Take a minute to sum up.

8 JUDGE EASTHOM: I know that's my fault. I'm sorry.

9 MR. CHANG: It's no problem. It's no problem.

10 We try to limit our claim specifically to the bottom-up approach. We
11 try to put in the language the noise control is at the terminal and we define
12 the noise reduction as something between the center and the terminal, and
13 we consistently in the spec make a very defined definition of what these
14 entities are.

15 I think it really is different from what Curry does by virtue of what we
16 do at the subscriber terminal and we eliminate the need for some of the
17 things that Curry does.

18 You had mentioned that we eliminate some of the functionality but I
19 think we address them in a different way in that we attenuate and amplify
20 locally; and so, we don't have the need to -- the centralize the noise
21 localization. We do it from the bottom up.

22 So, that's basically what we're trying to do.

23 JUDGE HAIRSTON: Okay. Any questions?

24 JUDGE SAADAT: No questions.

25 JUDGE EASTHOM: No. Thank you.

26 JUDGE HAIRSTON: Thank you.

1 (Whereupon, at approximately 9:50 a.m., the proceedings were
2 concluded.)